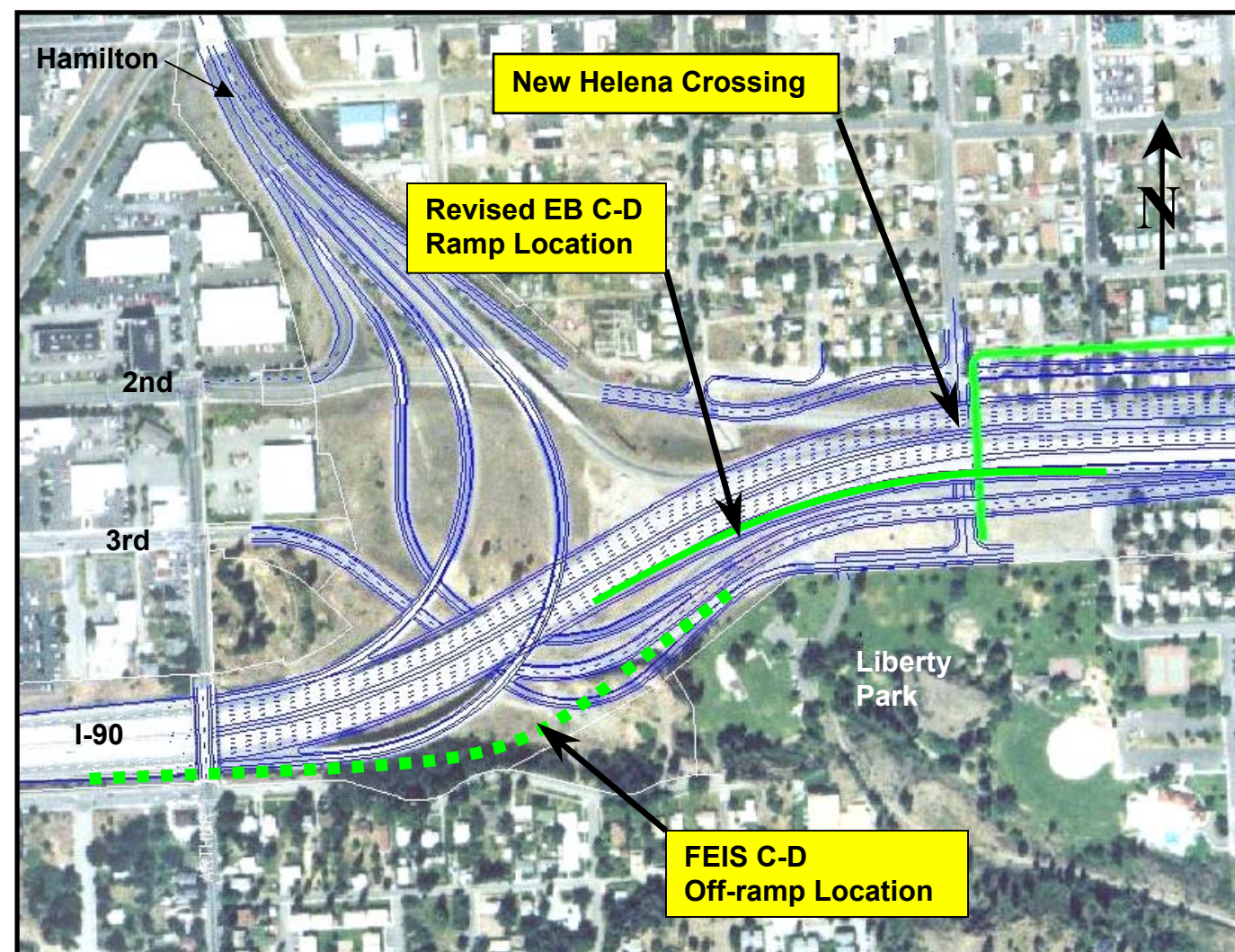


VE Team Recommendation	Response	Estimated Cost (\$) or Savings (In millions of dollars)
1	Accept	\$55.2
2	Accept	(\$4.8)
3	Accept	\$52
4	Accept	\$79.0 (Qwest building ROW cost Your Place Park Replacement)
5	Accept	\$2.2
6	Accept	(\$1.0 for ROW)
Total Savings		\$182.6

Value Engineering Recommendation #1

“FEIS Modified Design” at the Liberty Park Interchange with a new Helena Overcrossing and moving the eastbound Collector Distributor off ramp to the vicinity of Helena

Estimated Savings: \$55.2 Million



Advantages:

- ❖ Reduces construction costs/impacts by using the existing I-90/3rd Avenue Bridge, the EB I-90 to NB Hamilton ramp bridge, and the ramp bridges over 2nd Avenue
- ❖ Reduces the revisions required for the Access Point Decision Report and the reevaluation of the FEIS in this vicinity
- ❖ Minimizes impacts to Liberty Park
- ❖ Provides a full movement interchange
- ❖ The new Helena crossing will be a safer access to the neighborhood south of I-90 from the area north of I-90 because of the existing signal located at Sprague and Helena and improved sight distance at the intersection of Helena and the off-ramp from the C-D.
- ❖ Moving the eastbound collector-distributor off ramp from the vicinity of the existing Hamilton Street exit to the Helena Street overcrossing vicinity reduces the noise and visual impacts to Liberty Park and the neighborhood directly south of Liberty Park
- ❖ Eliminates a non-standard left hand off-ramp connection for the eastbound Hamilton Street ramp
- ❖ Moving the collector-distributor ramp connection lengthens the weave distance between the Division Street on-ramp and the collector-distributor off-ramp which improves the traffic operations on eastbound I-90 considerably between Division and Liberty Park
- ❖ Saves an estimated \$55.2 million in construction, right of way, and preliminary engineering costs

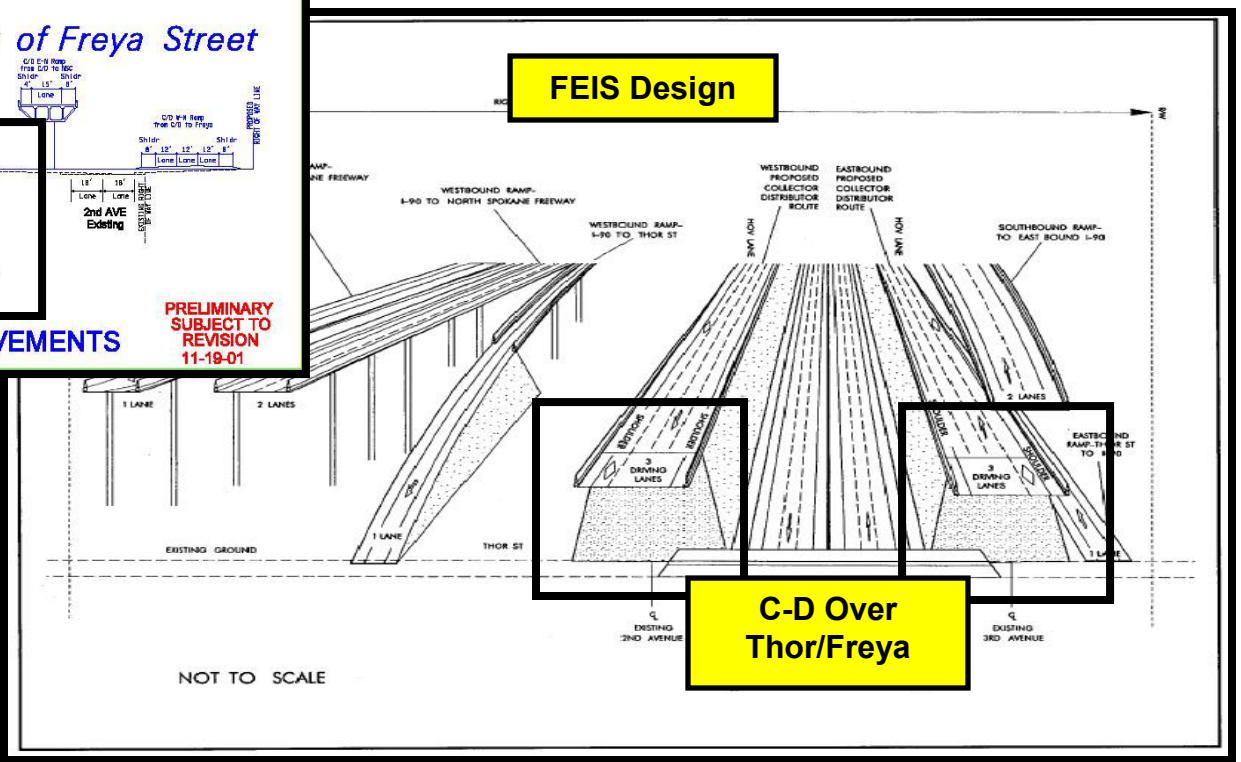
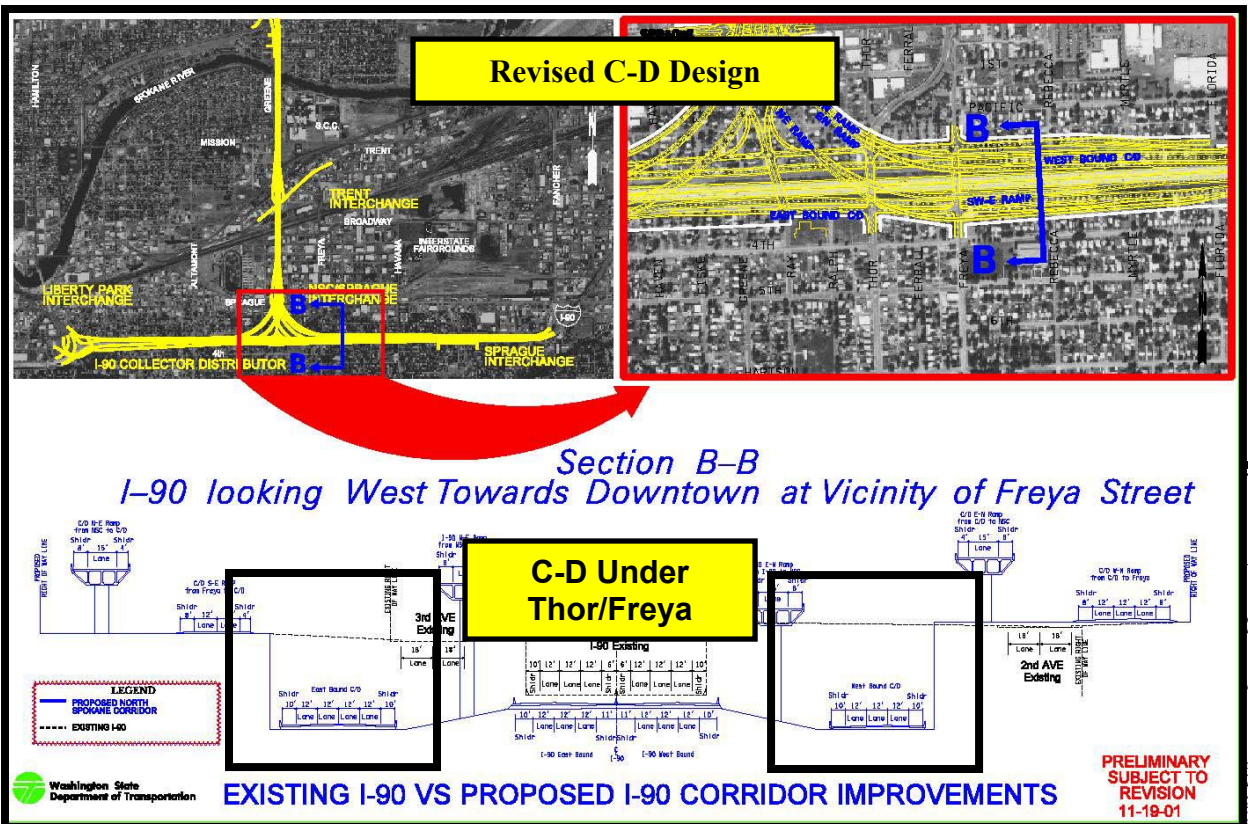
VE Team Recommendation	Response	Estimated Cost (\$) or Savings (In millions of dollars)
1	Accept	\$55.2
2	Accept	(\$4.8)
3	Accept	\$52
4	Accept	\$79.0 (Qwest building ROW cost Your Place Park Replacement)
5	Accept	\$2.2
6	Accept	(\$1.0 for ROW)
Total Savings		\$182.6

Value Engineering Recommendation #3
Lower the profile of the Collector-Distributor in the vicinity of Thor and Freya approximately 50'

Estimated Savings: \$52 Million

Advantages:

- ❖ Reduces noise and visual impacts in this vicinity which includes the Libby Center, Sheridan School, Your Place Park, and many residential homes
- ❖ Reduces the project costs by \$9 million by reducing the number and size of the bridges & walls needed for the collector-distributor roads
- ❖ The surplus of excavation quantity can be used to build some of the directional ramps which will reduce the amount of bridge structures needed for these ramps saving an estimated \$43 Million dollars (costs include lowering the I-90 and collector distributor profile at Altamont Street, Recommendation #5)



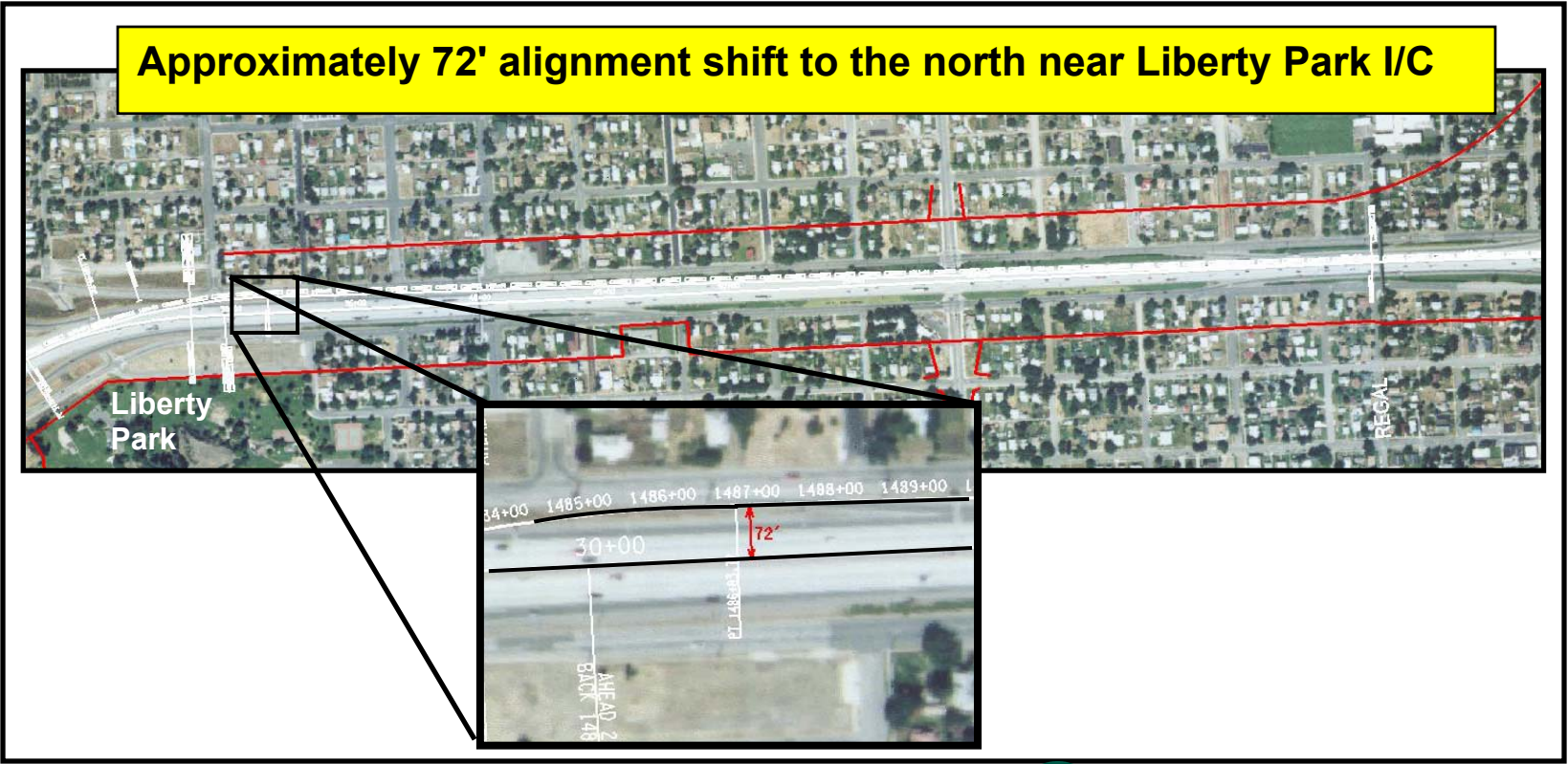
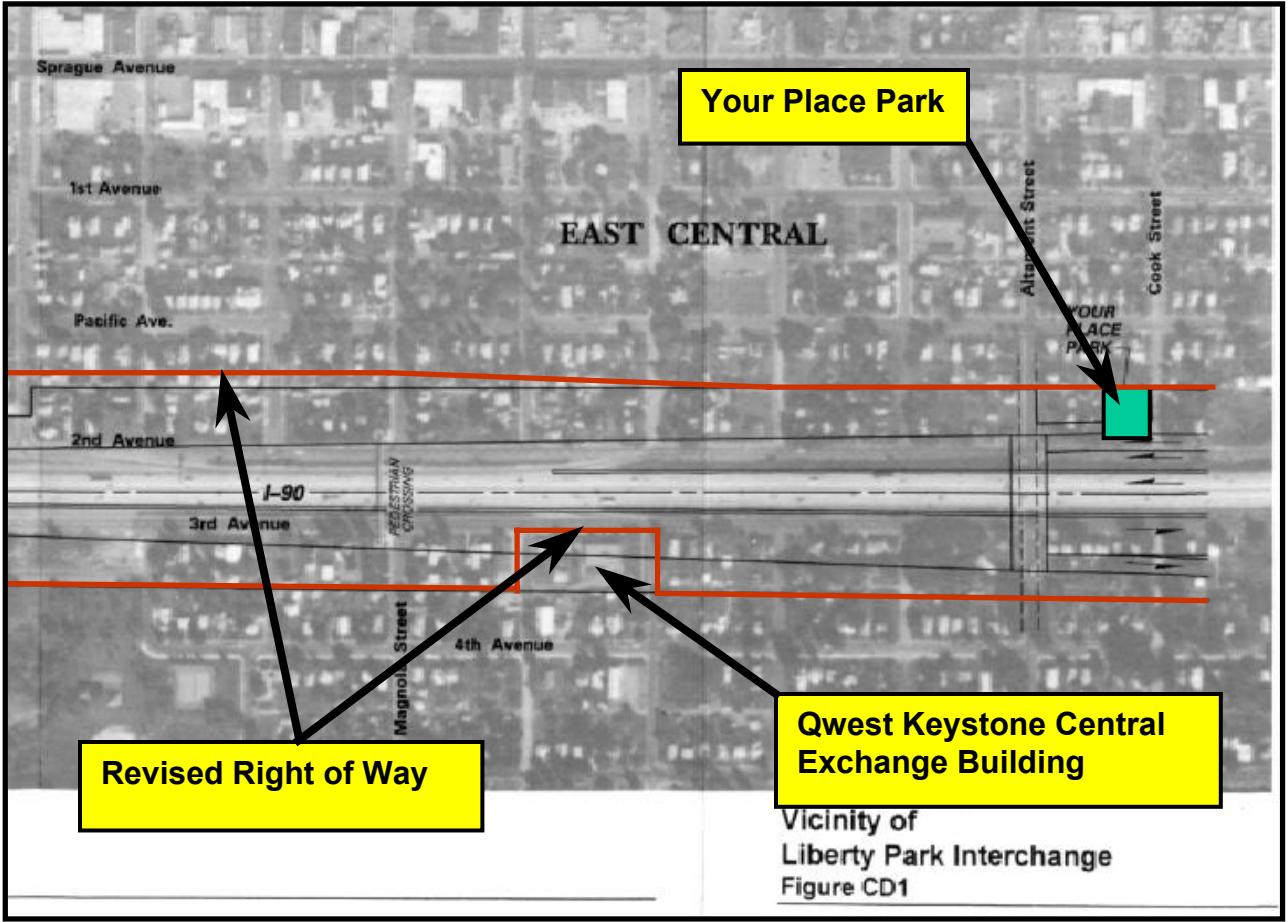
VE Team Recommendation	Response	Estimated Cost (\$) or Savings (In millions of dollars)
1	Accept	\$55.2
2	Accept	(\$4.8)
3	Accept	\$52
4	Accept	\$79.0 (Qwest building ROW cost Your Place Park Replacement)
5	Accept	\$2.2
6	Accept	(\$1.0 for ROW)
Total Savings		\$182.6

Value Engineering Recommendation #4
I-90 alignment revision from Liberty Park to Thor/Freya
(1.5 miles)

Estimated Savings: \$79 Million

Advantages:

- ❖ Improves the geometrics by removing one angle point in the existing I-90 alignment and replacing the substandard curve at the Liberty Park interchange in the vicinity of the Perry Street crossing
- ❖ Remains within the right of way footprint of the FEIS with the exception of the westbound off-ramp from the collector-distributor to Helena/2nd Ave./Hamilton Street
- ❖ Will not impact the Qwest Keystone Exchange building (estimated at \$80 Million to relocate)

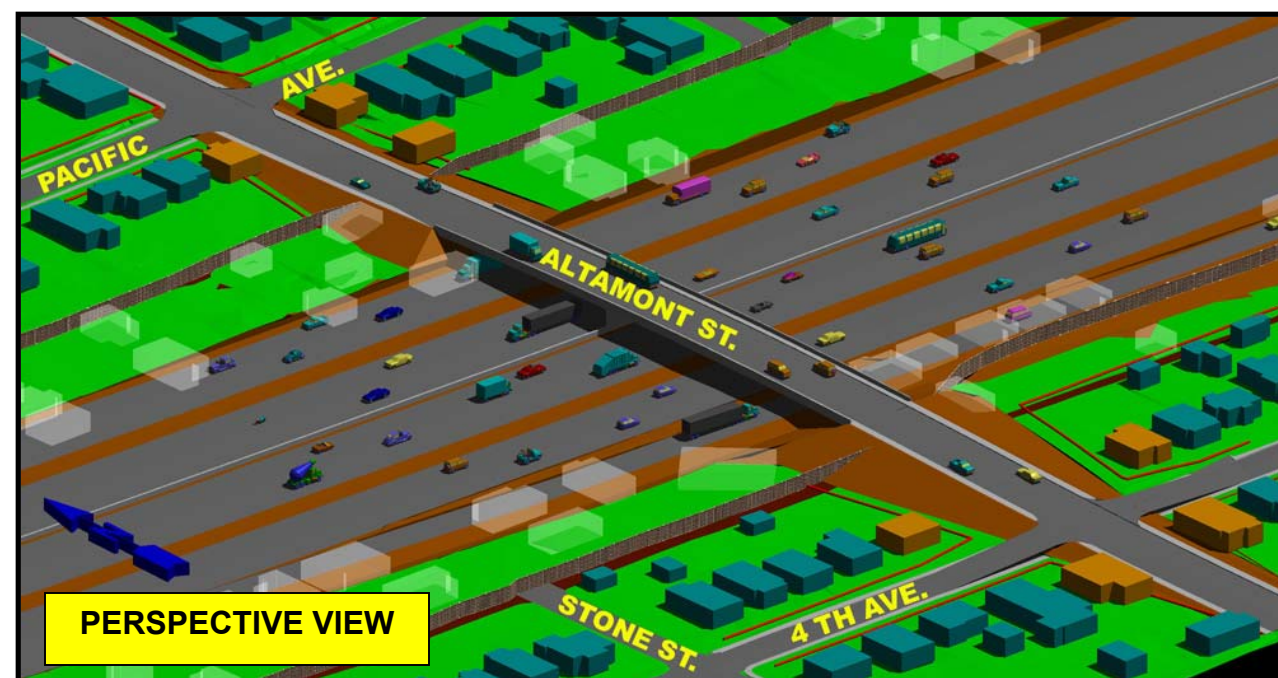


VE Team Recommendation	Response	Estimated Cost (\$) or Savings (In millions of dollars)
1	Accept	\$55.2
2	Accept	(\$4.8)
3	Accept	\$52
4	Accept	\$79.0 (Qwest building ROW cost Your Place Park Replacement)
5	Accept	\$2.2
6	Accept	(\$1.0 for ROW)
Total Savings		\$182.6

Value Engineering Recommendation #5 Altamont over I-90 option (lower I-90 roadway to existing ground)

Estimated Savings: \$2.2 Million*

*Additional savings included in Recommendation #3



Advantages:

- ❖ Reduces noise and visual impacts in this vicinity.
- ❖ Revising the I-90 profile will eliminate the substandard vertical curve on I-90 at Altamont Street and the vicinity of Fiske/Greene Street.
- ❖ Increases visibility of pedestrians, which increases pedestrian safety (the existing tunnel is a safety concern with the neighborhood).
- ❖ Will save \$2.2 million in construction costs (Estimated construction \$35 million for Altamont under I-90 and \$32.8 million for I-90 over Altamont).
- ❖ The surplus of excavation quantity can be used to build some of the directional ramps, which will reduce the amount of bridge structures needed for these ramps (Cost savings are included in Recommendation #3).

